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THE OBJECTIVES OF SECONDARY EDUCATION

FRANKLIN BOBBITT

University of Chicago

In the world of economic production a major secret of success is *predetermination*. The management predetermines with great exactness the nature of the products to be turned out, and in relation to the other factors, the quantity of output. They standardize and thus predetermine the processes to be employed, the quantity and quality of raw material to be used for each type and unit of product, the character and amount of labor to be employed, and the character of the conditions under which the work should be done. Their predetermination of the finance is called their budget. The business world is institutionalizing foresight and developing an appropriate and effective technique.

There is a growing realization within the educational profession that we must particularize the objectives of education. We, too, must institutionalize foresight, and, so far as the conditions of our work will permit, develop a technique of predetermination of the particularized results to be aimed at. We are awakening to the obvious truth that when a long journey is to be taken, one of the most necessary things to know before setting out is the destination.

The administrative awakening to the need of determining with definiteness the goals of public education is coming surprisingly late. In the world of economic production it is axiomatic that nothing can be done until it is decided what products are to be turned out; but in the field of public education we have in large measure been building and organizing our huge plants and operating them full blast without having definitely predetermined the kinds of products which we are going to turn out. Exceptions, of course, must be made in the case of a few things, such as the ability to read, to write, to spell, to compute, to read maps, to express one's self in clear and correct English, and a few others. These matters are

mainly taken care of upon the elementary level. The high schools for the most part have not particularized their objectives in terms of human activities or human well-being. The situation is well stated by Dr. Snedden:

The great problems of secondary education today are, of course, problems of aim. The concrete, immediate aims which control the large majority of our administrative and pedagogic procedures in the American high school (and how very concrete and definite and exacting many of them are) are of quite unknown value. We have not defined them in terms of human good; we seem unable to estimate the value of the results achieved in our efforts to realize them. We teach our prescribed algebra strenuously and with some very definite objectives, but we flounder pitifully when we try to prove that these objectives are really worth while. We have refined and standardized our immediate objectives in teaching physics and chemistry, but what we actually attain by it all in terms of human well-being remains concealed in the obscurity of vague phrase and inadequate generalization. We drive our boys and girls hard up the steepes of Latin, French, and German, but we are forced to fall back on mystical and uncertain faiths in the endeavor to justify our driving of particular youths up these particular steepes.

We have in reserve, of course, large, splendid aims which are alleged, finally, to guide the evolution and destinies of our secondary schools. Do we not freely use such terms as "character formation," "mental discipline," "self-realization," "social efficiency," "culture," "citizenship," "leadership," "intellectual power," and a score of other unanalyzed general phrases, as expressive of our ultimate goals? And in these are there not summed up most of the purposes that really count in this life? It must be admitted that we do still live largely in a maze of faith (and fable) as regards education. . . . For, after all, our great fine aims in secondary education, expressed in tenuous even though aspiring phrase, are in reality only faith aims; in practice they rarely actually guide us in choice of ways and means; and we seldom stop to measure the tangible results of our teaching against the shadowy and ever-varying interpretations of these aims as set forth in books and journal articles.¹

During the five years since Dr. Snedden's statement appeared, much, very much, has been done. The National Education Association Commission on the Reorganization of Secondary Education in its "Cardinal Principles of Secondary Education" has presented a statement of seven groups of educational objectives which should dictate the work of high schools. For each field they present a few examples of particularized objectives. A

¹ David Snedden, "New Problems of Secondary Education," *American Education*, February, 1916, pp. 332-36.

similar type of task is being undertaken by many superintendents, principals, and professors of education. The realization of the need is well expressed by Dr. Hollister in a letter to the high-school principals and teachers of Illinois:

It is very desirable that, before we consider the time and place to be given to various subjects and activities in the school curriculum, we should determine clearly what our objectives are to be. By this means only shall we obtain any reliable basis for weighing the various subjects as determined by the relative importance of each in attaining such objectives.

In most discussions of the objectives, certain shortcomings are painfully evident. To mention one, the objectives are usually too general for the guidance of actual procedure. For example, the National Education Association Commission recommends the following seven: (1) health, (2) command of fundamental processes, (3) worthy home membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, (7) ethical character.

This is a genuine contribution; but it can have little value in the guidance of practical labors until these general terms are broken up into their specifics. To aim at health, for example, in a vague, general way is scarcely to aim at all. We need an itemized statement of the specific habits which condition good health and which, therefore, are to be developed in men and women during their formative years; an itemized statement of the attitudes and valuations which lie back of and support these habits; equally specific statement of the definite powers of judgment to be developed; statement of the bodies of information needed for guidance, control, and the intellectual support of habits, valuations, etc.; statement of aspects of physical development in which the individual's pride should be awakened; and a number of other things.

Let us illustrate by presenting a sample list of specific health abilities at which education might aim:

1. Ability to make one's food contribute in maximum measure to one's physical well-being.
2. Ability to keep the body mechanism properly oxygenated.
3. Ability to utilize muscular exercise as a life-long means of developing and maintaining a high level of physical vitality.
4. Ability and disposition throughout life to engage with pleasure and profit in a varied repertory of games, sports, athletics, dances,

outdoor recreations, etc., such as swimming, skating, hiking, rowing, riding, tennis, golf, ball games of various kinds, running games, fencing, folk dancing, fishing, hunting, canoeing, motoring, camping, athletic events, etc.

5. Ability to engage in a variety of unspecialized productive labors which contribute diverse and needed elements to one's repertory of physical experiences.

6. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical well-being.

7. Ability to make one's sleep contribute in maximum measure to the development and maintenance of a high level of physical vitality.

8. Ability to protect one's self from micro-organisms; and to deal with them and their products effectively in case of attack.

9. Ability rightly to control the factors involved in the maintenance of bodily temperatures.

10. Ability to dress in ways that promote the physical well-being in maximum degree.

11. Ability to maintain bodily cleanliness, external and internal.

12. Ability to provide the most favorable conditions for the elimination from the tissues, organs, and body in general of all harmful or needless substances and agents.

13. Ability to control one's relations to sunlight so as to secure maximum benefits therefrom.

14. Ability to maintain postures conducive to the best physical functioning.

15. Ability to secure that variety or diversity of physical experiences necessary for maximum well-being.

16. Ability to maintain that proper balance between excessive regularity and excessive irregularity which is necessary for maximum physical well-being.

17. Ability properly to utilize painful experiences as elements in one's repertory of necessary physical experiences.

18. Ability to work *hard* for long periods and still keep physically fit.

19. Ability to draw up an individual program of work, play, rest, sleep, meals, etc., best suited to one's physical nature and capacity; and currently to keep that program of work adapted to the ever-changing conditions of one's situation.

20. Ability to protect one's self from preventable accidents.

21. Ability to deal with conditions produced by many kinds of common accidents.

22. Ability to protect from dust, smoke, noxious gases, etc.

23. Ability to care for the eyes.

24. Ability to care for the teeth.

25. Ability to care for nose, ears, and throat.

26. Ability to avoid or to prevent the conditions which bring on or sustain colds.

27. Ability to keep the heart and blood vessels in normal working condition.

28. Ability to care for the skin.

29. Ability to care for the hair and scalp.

30. Ability to care for the nails.

31. Ability to care properly for the feet.

32. Ability to control sex functions in the interests of high physical vitality.

33. Ability to keep reasonably well-informed, in the degree to be expected of a layman, as to the progress and discoveries of science in the fields of health conservation and promotion.

34. Ability to recognize the symptoms of many kinds of ailments in their incipient stages.

35. Ability to take the protective, precautionary, or remedial steps necessary to protect one's self or family from a considerable number of common ailments.

36. Ability within one's occupational field to co-operate effectively in providing wholesome working conditions.

37. Ability wisely to utilize the services of specialists in health and physical upbuilding and maintenance.

38. Ability to perform one's civic functions in co-operating with and in the social support and control of all public agencies engaged in promoting the general physical welfare.

If the educational objective agreed upon by the profession is simply the general matter of health, it is possible for the curriculum-maker to miss a considerable or even a large portion of the field without even knowing it. If, however, we have a full and detailed list of the abilities required, then the curriculum-maker is guided in the formulation of a complete and well-proportioned program. The foregoing list will probably not require many additions to be relatively complete. It was formulated from the suggestions of several hundred experienced professional workers. It is the judgment of the writer that our profession should draw up co-operatively as early as practicable an authoritative list to be used for guidance in curriculum-making.

An ability is a complex or composite thing. Each of the foregoing objectives can be broken up into further specifics. Each one of them requires certain habits, valuations, attitudes, interests, tendencies, desires, items or bodies of information, powers of judgment, impelling faiths, social sensitiveness and responsiveness, pride of physique, etc. We are not ready really to formulate the curriculum until we have taken each several ability and thus broken it up into its specifics and laid them out before us for our guidance in formulating pupil-experiences. Education will not aim at the development of the abilities in a merely general way. It must aim definitely and accurately at the development of each of the specific ingredients which make up the abilities. Let us illustrate by presenting a series of the specifics involved in the first of the list given above. The limitations of space preclude any attempt to present here a complete series.

ABILITY TO MAKE ONE'S FOOD CONTRIBUTE TO ONE'S
MAXIMUM WELL-BEING

1. *Habit* of selecting a balanced dietary adapted to one's nature, size, age, character of work, the season of the year, etc.
2. Good *judgment* in making adaptations of one's dietary to meet ever-changing conditions.
3. Impelling and effective *desire* to make one's food contribute in maximum degree to one's well-being.
4. Impelling *desire* for that level of physical energy which can be had only through obedience to the dictates of dietetic science.

5. Effective *desire* for the things which one can usually have only when one maintains a high level of vitality.

6. *Willingness* to forego dietetic pleasures of the moment for the sake of maintaining physical efficiency.

7. *Willingness* in the care of one's dietary to take trouble, and when necessary to endure pain and privation, for the sake of maintaining physical efficiency.

8. Automatic *habit* of refraining from foods known to be unwholesome, however attractive or tempting they may be.

9. *Habit* of self-control in the matter of one's appetite.

10. An effective *interest* in dietetic science and the physiology of nutrition.

11. A good *knowledge* of the chemical composition of foods.

12. A *knowledge* of the physiological values of foods of different kinds.

13. *Knowledge* of variations in amount and character of food needed according to the age of the individual, his size, character of his work, the seasonal temperatures, etc.

14. *Knowledge* of kinds of food contaminations to be avoided.

15. A *habit* of noting the sanitary characteristics of one's food supply.

16. *Habit* of avoiding all foods of questionable sanitary character.

17. A *disposition* to obey the dictates of physiological and dietetic laws.

18. An enduring *faith* in the efficacy of the dictates of dietetic science.

19. A detailed *understanding* of the relation of one's food supply to one's vocational efficiency.

20. A *habit* of choosing one's diet with a sufficient view to one's vocational efficiency.

21. A detailed *understanding* of the relation of one's dietary to one's ability to enjoy and to profit from one's leisure occupations.

22. A detailed *understanding* of the relation of one's food supply to mental clarity and general mental efficiency.

23. A full *understanding* of the relation of one's food supply to general social efficiency, civic efficiency, etc.

24. A full *appreciation* of the degree to which one's general efficiency is dependent upon right food habits consistently maintained.
25. A *habit* of considering the effects upon one's general physical efficiency as one currently selects one's food.
26. Such a *valuation* of and *desire* to perform with pleasure and profit the entire round of desirable human activities that one is impelled to obey the dictates of hygienic science.
27. A full *knowledge* of the relation of muscular activity to normality of digestion and assimilation.
28. *Knowledge* of the ways in which digestion can be interfered with and deranged through excessive activities during or immediately after meals.
29. *Habit* of avoiding excessive nervous or muscular activity during or immediately following meals.
30. *Habit* of mental and physiological serenity at the time of and immediately after one's meals.
31. *Consistency* in holding to regular times for eating; avoidance of irregular eating between meals.
32. *Habit* of eating with sufficient slowness.
33. *Knowledge* of values of thorough mastication of one's food.
34. *Habit* of thorough mastication of one's food.
35. *Knowledge* of the relation of surrounding temperatures to normality of digestion and assimilation.
36. *Knowledge* of the kinds of harm that may result from improper balance in the ration.
37. *Knowledge* of the kinds of harm that result from insufficient food.
38. *Knowledge* of the kinds of harm that result from excess food.
39. *Knowledge* of the symptoms of improper functioning in any portion of the alimentary tract.
40. *Skill* in detecting the symptoms of improper functioning.
41. *Knowledge* of the measures to be taken when symptoms indicate improper functioning in any portion of the alimentary tract.
42. *Skill* in judging, planning, and promptly taking proper action in cases of improper alimentary functioning.
43. *Knowledge* of the physiological conditions best for moving the food normally through the alimentary tract.

44. Specially full *knowledge* in one's individual case of the specific food ingredients, etc., which are specially helpful in producing normally rapid and complete movement of food residues through the alimentary tract.

45. A full *knowledge* of the specific conditions, influences, ingredients, etc., which tend in one's particular case to produce sluggishness of movement through the alimentary tract.

46. *Knowledge* of the ways in detail in which the form of dress may interfere with alimentary functions.

47. Consistent *habit* of dressing so as to avoid interference with alimentary processes.

48. Such *confidence* in one's ability to choose his dietary that it is done, and satisfactorily done, without that introspective concern which may easily become excessive and morbid.

Many other items should be added to the list before it is even reasonably complete. Enough are here given to illustrate the professional task which lies before us. It seems that not only should we co-operatively formulate a full and authoritative series of abilities to be developed, but we should likewise co-operatively formulate for each one of them a reasonably complete and authoritative series of the specific ingredients to be aimed at. With such lists before the curriculum-maker in any specific situation, he has full and secure guidance.

Such a list is imperative because of professional prejudices and predilections relative to the so-called content of education. Theoretically, we value much besides *information*; but practically, leaving aside fundamental processes and certain language abilities, emphasis everywhere is upon information and informational technique. The foregoing list shows information to be a necessary component of the educational structure; but equally evident are habits, attitudes, valuations, desires, interests, tendencies to action, sense of responsibility, etc. In spite of what we say relative to the values of these latter things, we do not actually aim at them with the precision and persistence that we employ in the case of information. For most of them we have no properly developed and actually operative technique. We are not likely to have such until we have more fully clarified our ideas relative to objectives

of non-informational type. When we realize that they are as important as information, then we shall develop the necessary technique of training.

Let our profession co-operatively develop these general and detailed lists of objectives of physical efficiency, and we shall have performed the first task in the development of scientific education in this field. As a matter of fact, we are not prepared rationally to perform the other tasks involved in physical education until this has been done. It is the objectives and the objectives alone, as conditioned by child-nature and opportunity, which dictate the pupil-experiences which make up the curriculum. It is then these in their turn which dictate the specific methods to be employed by the teachers and specific material helps and appliances and opportunities to be provided. These in their turn dictate the supervision, the nature of the supervisory organization, the quantity of finance, and the various other functions involved in attaining the desired results. And finally, it is the specific objectives which provide standards to be employed in the measurement of results. We are trying to introduce scientific methods into every aspect of the field; but, quite clearly, the interrelationships of these factors are such that we can never develop scientific procedure throughout the field until we have laid a secure foundation in the careful determination of the objectives. The later educational procedure cannot be regarded as very scientific if it must all be based upon initial vague and fragmentary guesses as to the objectives.

The first step of scientific procedure is predetermination of the outcomes.

To avoid misapprehension, we must say that there can be no series of physical education objectives applicable equally everywhere and to all individuals which can be the basis of universally uniform courses of training in the field. The objectives actually aimed at within any school system must differ from region to region according to the specific needs of the population; they must differ from individual to individual according to the specific nature and needs of the beneficiary; they must differ according to the teaching, supervisory, and material resources of the community; they must differ in some measure according to the social

character and attitudes of the laymen in different communities; they must differ according to the degree of parental and community co-operation which can be secured; and for other reasons.

There is probably little or no danger in the co-operative task here recommended resulting in the uniformization and mechanization of the physical-training program. It is when we are aiming in vague and general ways that it appears possible to have a uniform program. When we reduce our objectives to specifics and look at the children from the point of view of those specifics, then not only the undesirability but the impossibility of holding to uniform programs of training becomes clearly evident.

The absurdity of our uniform courses of training has long been theoretically evident; but practically our technique of curriculum-making has tended to encourage and retain this vicious uniformity in our courses of training. Before we can eliminate the evil, we must change our technique of curriculum-making and find methods which encourage the exact adaptation of the curriculum to the needs of individuals, classes, and regions. The particularization of our objectives is undoubtedly one major feature of such individualizing technique.

We have now sufficiently illustrated the health-group of educational objectives. The question that now arises is, What are the various other groups of objectives which should in the same way dictate the entire round of human education? Different methods of classification are employed by different individuals. No one series of categories yet stands out as demonstrably the best yet suggested. The profession has not sufficiently considered the matter for any authoritative pronouncement. Such an official pronouncement, even though tentative and merely a basis of further effort, is now greatly needed. The National Education Association Commission's series, above presented, is a valuable contribution. The present writer would suggest consideration of a somewhat more inclusive series, as follows:

1. Education for general physical efficiency. Play-level and work-level.
2. Education for general mental efficiency. Play-level and work-level.

3. Education for unspecialized activities of production, distribution, conservation, and consumption. Play-level and work-level.

4. Education for one's specialized calling.

5. Education for citizenship.

6. Education for general social relationships and contacts. Play-level and work-level.

7. Education for social intercommunication. (Languages and other modes of intercommunication.) Play-level and work-level.

8. Education for religious attitudes and activities.

9. Education for parental responsibilities.

There are two details about this list which may not be entirely clear. The first is the omission of "Education for leisure occupations" as one of the series. After long consideration of the matter, however, it seems desirable to the writer to take care of the leisure occupations as the play-level in each of these nine divisions. It appears that in every one of them it is desirable to utilize and to train for experiences on both play-level and work-level. Obviously, the experiences on the play-level are very abundant in the case of some of them as, for example, the first and second; while experiences on the work-level are most abundant in the case of certain others as, for example, the fourth and fifth. But even in the case of these latter, it appears that there should be a large play ingredient throughout life.

The other thing likely to be misunderstood is the second general category, namely, "Training for general mental efficiency." The phrasing sounds remarkably like that of an ancient and outworn doctrine which, when accepted, may provide excuse for an educational program which is the negation of everything else in our list. The term, however, does not refer to the dusty doctrine of formal discipline. If the reader will note how general physical efficiency is the outcome of the many specific physical abilities enumerated in the first list above, he can, by using this as an analogy, arrive at the meaning intended by this second term. He must, however, look at it from the point of view of behavioristic psychology.